Regional Freight Plan
FTAC Meeting #2

presented to
Regional Planning Commission of Greater Birmingham

presented by
Cambridge Systematics, Inc.
with
Volkert, Inc.
Creative Directions, Inc.

May 19, 2017
Agenda

- Introductions and Meeting Purpose
- Review Work to Date and Schedule
- Additional Stakeholder Input Summaries
- Regional Freight System Profile
- Discuss Project Identification and Prioritization Process
- Review Remaining FTAC Activities
- Next Steps
Introductions

- Name
- Title and affiliation
- Role in Region’s Freight System
Review Work to Date and Schedule

- Task 1. Stakeholder Engagement [ongoing]
- Task 2. Data Compilation [complete]
- Task 3. Freight Profile [under development]
- Task 4. Needs Identification and Prioritization [underway]
- Task 5. Plan Recommendations
Review Work to Date and Schedule

*Project Largely on Schedule*

### Project Management
- Stakeholder Engagement
- Data Compilation
- Freight Profile
- Needs Identification and Prioritization
- Plan Recommendations

<table>
<thead>
<tr>
<th>Task</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
</tr>
</thead>
</table>

- **Project Team Meeting**
- **Freight Advisory Committee Meeting**
- **Freight Training**
- **Draft Freight Profile**
- **Draft Plan Recommendations**
- **Draft Performance Measures Matrix**
- **Final Freight Profile**
- **Final Plan Recommendations**
- **Final Performance Measures Matrix**
Additional Stakeholder Interviews

Twenty-Five Stakeholder Interviews

- Interviews have captured input from
  - Government
  - Economic development
  - Industry associations
  - Motor carriers
  - Railroads
  - Airport
  - Port
  - Logistics providers (3PLs, brokers)
  - Shippers/manufacturers

- Shippers added to list since last meeting:
  - Vulcan Materials Company
  - Honda Manufacturing of Alabama, LLC
  - EBSCO Industries, Inc.
  - KAMTEK
Limestone aggregate industry serves variety of businesses (concrete, asphalt, road and home construction)

- Growth is driven by key factors including population, tax base, etc.; Birmingham is not a high growth market
- Product movement is complicated by weight restrictions on bridges; trucks often are prohibited from using the Interstate System
- Rail is used for some movements
Additional Stakeholder Input

Shippers and Manufacturers

- Automobile manufacturing and assembly industry produces variety of models
  - Components consist of domestic and international suppliers
  - Supplier shipments are time sensitive; order fulfillment requirements can be hours from time of order
  - Suppliers often serve multiple companies and product lines
  - Seaports, railroads, trucks, and air are used for inbound and outbound shipments
  - Carriers (and modes) are selected based on service and ease of negotiations/price
Additional Stakeholder Input

Shippers and Manufacturers

» Manufacturing and distribution industry relies on efficient movement of goods (inbound and outbound)

» Specialized transportation services are required for project specific materials

» Intermodal rail service and seaport connections are important

» E-commerce has resulted in smaller shipments and faster delivery times; this can change sourcing decisions, warehouse locations, and puts pressure on transportation system reliability

» Effective use of technology (artificial intelligence, autonomous vehicles, drones) will impact competitiveness of companies and regions
Additional Stakeholder Input

**Strengths**

- Interstate system provides access in all directions
- Northern Beltline will help complete the network
- I-22 connection improves access to Memphis
- Region has good alternate routes and detours avoid problem areas
- Extensive rail system serves regional industries
- Region has reliable weather
Additional Stakeholder Input
Weaknesses

- Pavement condition and lack of ongoing maintenance
- Constrained availability of trained/qualified workforce, including truck driver shortage
- Congestion/lack of capacity on key roadway corridors
- Impact of construction zones on traffic flow/congestion
- Local regulations reduce system efficiencies; weight restrictions on bridges create circuitous routes
- Inclement weather (snow, ice) shuts the system down
- Poor street lighting on secondary roads
- Limited bike lanes and sidewalks create safety concerns
- Limited direct flights impact business opportunities
Identified Needs

- Highway 79 mixed traffic, pavement condition, and heavy congestion/needs additional lane
- Highway 150 near Hoover has heavy congestion
- I-459/I-65 interchange has significant backups limiting mobility
- I-459/I-20 interchange has rough spot on ramp that causes load shifts
- Improved notification of roadway construction projects
- Weather notification system
- Congestion along I-280
- Intermodal rail connection to Port of Mobile and Port Birmingham
- 2059/65 interchange
Additional Stakeholder Input

Truck Driver Survey Results

» 10 drivers completed the entire survey, roughly half of the people who began it
  » 100% responded that congestion is the worst problem they experience on the roadways
  » 80% have issues with pavement conditions
  » 50% indicated issues with truck parking
  » None stated issues with enforcement, signage, turn pocket storage, distance between signals, HAZMAT routing, or the availability of CNG refueling
Drivers provided a variety of locations where they experience issues:

- Oxmoor Road at Barber Court/Montevallo Road SW (pavement conditions, dangerous)
- Industrial Drive/Oxmoor Road – pavement conditions/markings
- Oxmoor Road as a whole – dangerous intersections/merge lanes
- I-459 bypass overpasses between Hoover and Bessemer – bumpy
- I-65 from exit 250 – 261 – rough pavement, often congested
- Alabaster exit and on ramp to I-65 – bottleneck
- I-20/I-59 interchange
- Congestion on I-65 from Calera to Birmingham – 4 lane
- Merging traffic congestion on I-65 – need ramp meters
- US 280 from Chelsea to I-459 – heavy congestion
- Highway 79 as a whole – pavement conditions/markings, lights/signals
Regional System Profile

- What makes up the freight and logistics system?
- What moves on the freight system?
- What is the economic impact of the freight industry?
- How does the region fit into the National Freight System?
Regional Freight System

- Roadways
- Railroads
- Waterways
- Ports
- Airports
- Pipelines
Regional Roadways

- Roadways
  - National Highway Freight Network
  - Other Non-NHFN Interstates
  - CUFC/CRFC
  - Other key state highways, arterials, and connectors
National Highway Freight Network

- NHFN was designated as part of the FAST Act building on MAP-21
- In Birmingham, this includes I-65, I-20, and I-459
  - I-22 is not considered in this designation as it was not an interstate at the time
  - I-59 east of Birmingham is also not included

- Intermodal Connectors include:
  - Burlington Northern RR Dixie Hub Center
  - Port Birmingham
  - Colonial Pipeline
  - Ernest Norris RR Yards

https://ops.fhwa.dot.gov/freight/infrastructure/nfn/
Rail Network

- **Class I Railroads include:**
  - BNSF Railway: 36 miles
  - CSX Transportation: 223 miles
  - Norfolk Southern Railway: 267 miles

- **Class III Railroads include:**
  - Alabama Warrior Railway: 7 miles
  - Alabama and Tennessee River Railway: 29 miles
  - Birmingham Terminal Railway: 37 miles

- Abandoned: 192 miles
Birmingham-Shuttlesworth International Airport

- Operates as a joint civil-military airport with two runways (12,007 feet and 7,099 feet)
- Airport master plan anticipates continued growth at BHM
- Various identified improvements focus on cargo enhancements
  - East Cargo Area – construct new cargo building and slurry seal (short term - $2.2M)
  - Air Cargo Facility Expansion (long term - $30M)

http://bhmmasterplan.com/
Ports and Waterways

- Region relies on access to deep water seaports outside the Birmingham area.
- Access to the inland waterway system provided by Port Birmingham and other private terminals.
- Highway and rail access to inland and deep water port facilities is critical.
Pipelines move a significant volume of cargo into, out of and through the region.

Access to transfer stations (where product is exchanged with other modes) is the key consideration.

Pipeline data is difficult to access given security considerations.

Work underway to map out key facilities.

Colonial Pipeline Company is one of many private companies serving the Birmingham region.

http://www.colpipe.com/home/about-colonial/system-map
Other Key Logistics Facilities

- Foreign Trade Zones (FTZs)
- Industrial parks
- Trucking terminals
- Manufacturers and distributors
- Retail/consumers
Land Use Impacts

- Significant portion of region consists of open space
- Terrain increases cost of land development
- Significant inventory of underutilized industrial property
- Residential and commercial uses are centered in the urban core
- Warehouse and distribution uses are focused along key roadway and rail corridors
Foreign Trade Zones

- Birmingham is home to FTZ No. 98, includes subzones:
  - 98A Mercedes-Benz
  - 98B ZJ Industries
  - 98C JVC America
  - 98D NACCO Materials Handling Group, Inc.

- Locations within Birmingham are:
  - Acipco – 314 acres
  - Airport Air Cargo – 50.5 acres
  - Airport CBI – 33.2 acres
  - Airport North/Northeast – 442 acres
  - Airport West – 24.8 acres
  - CSX Railroad – 100 acres
  - Munger – 96.35 acres
  - Oxmoor Valley/USX – 705 acres
  - Oxmoor Industrial Park – 28.8 acres
  - Pizitz/McRae’s Warehouse – 13.9 acres
Access to the System

- Industrial land uses and FTZs are concentrated along key transportation corridors
- Roadway and rail corridors and connectors provide access
## Commodity Flow Analysis

**Tonnage Moved by Mode and Modal Share, 2015**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Origin (1,000 tons)</th>
<th>Destination (1,000 tons)</th>
<th>Internal (1,000 tons)</th>
<th>Total (1,000 tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>33,751</td>
<td>26,116</td>
<td>33,836</td>
<td>93,703</td>
</tr>
<tr>
<td>Rail</td>
<td>7,843</td>
<td>19,044</td>
<td>1,389</td>
<td>28,275</td>
</tr>
<tr>
<td>Pipeline</td>
<td>872</td>
<td>11,698</td>
<td>0</td>
<td>12,570</td>
</tr>
<tr>
<td>Multiple Modes &amp; Mail</td>
<td>1,475</td>
<td>2,161</td>
<td>126</td>
<td>3,763</td>
</tr>
<tr>
<td>Air (Includes Truck-Air)</td>
<td>10</td>
<td>7</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Water</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43,951</strong></td>
<td><strong>59,028</strong></td>
<td><strong>35,352</strong></td>
<td><strong>138,331</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>Origin</th>
<th>Destination</th>
<th>Internal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>77%</td>
<td>44%</td>
<td>96%</td>
<td>68%</td>
</tr>
<tr>
<td>Rail</td>
<td>18%</td>
<td>32%</td>
<td>4%</td>
<td>20%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>2%</td>
<td>20%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>Multiple Modes &amp; Mail</td>
<td>3%</td>
<td>4%</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td>Air (Includes Truck-Air)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Water</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Source: FHWA – FAF4*
## Commodity Flow Analysis

### Top Commodities by Tonnage, 2015

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Origin (1,000 tons)</th>
<th>Destination (1,000 tons)</th>
<th>Internal (1,000 tons)</th>
<th>Total (1,000 tons)</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>9,057</td>
<td>14,366</td>
<td>4,514</td>
<td>27,938</td>
<td>20%</td>
</tr>
<tr>
<td>Coal – n.e.c.</td>
<td>1,838</td>
<td>14,197</td>
<td>622</td>
<td>16,657</td>
<td>12%</td>
</tr>
<tr>
<td>Gravel</td>
<td>4,096</td>
<td>817</td>
<td>8,651</td>
<td>13,564</td>
<td>10%</td>
</tr>
<tr>
<td>Nonmetal Min. Prods.</td>
<td>6,220</td>
<td>861</td>
<td>3,160</td>
<td>10,241</td>
<td>7%</td>
</tr>
<tr>
<td>Base Metals</td>
<td>3,906</td>
<td>3,216</td>
<td>800</td>
<td>7,923</td>
<td>6%</td>
</tr>
<tr>
<td>Woods Prods.</td>
<td>3,619</td>
<td>1,506</td>
<td>1,451</td>
<td>6,577</td>
<td>5%</td>
</tr>
<tr>
<td>Motorized Vehicles</td>
<td>786</td>
<td>1,521</td>
<td>2,767</td>
<td>5,074</td>
<td>4%</td>
</tr>
<tr>
<td>Other Foodstuffs</td>
<td>3,750</td>
<td>1,688</td>
<td>507</td>
<td>4,946</td>
<td>4%</td>
</tr>
<tr>
<td>Articles – Base Metal</td>
<td>3,546</td>
<td>886</td>
<td>399</td>
<td>4,831</td>
<td>3%</td>
</tr>
<tr>
<td>Waste/Scrap</td>
<td>131</td>
<td>1,797</td>
<td>2,545</td>
<td>4,472</td>
<td>3%</td>
</tr>
<tr>
<td>All Others</td>
<td>8,000</td>
<td>18,173</td>
<td>9,936</td>
<td>36,109</td>
<td>26%</td>
</tr>
<tr>
<td>Total</td>
<td>43,951</td>
<td>59,028</td>
<td>35,352</td>
<td>138,331</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: FHWA – FAF4
Overall, trade is predominately concentrated in the southeastern United States.

- 34% more goods come into the Birmingham region than leave it.

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Total (1,000 tons)</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>71,555</td>
<td>52%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>14,305</td>
<td>10%</td>
</tr>
<tr>
<td>Wyoming</td>
<td>9,113</td>
<td>7%</td>
</tr>
<tr>
<td>Georgia</td>
<td>6,104</td>
<td>4%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>4,658</td>
<td>3%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>3,233</td>
<td>2%</td>
</tr>
<tr>
<td>Florida</td>
<td>3,189</td>
<td>2%</td>
</tr>
<tr>
<td>Indiana</td>
<td>2,408</td>
<td>2%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>2,406</td>
<td>2%</td>
</tr>
<tr>
<td>Illinois</td>
<td>2,322</td>
<td>2%</td>
</tr>
<tr>
<td>Ohio</td>
<td>2,291</td>
<td>2%</td>
</tr>
<tr>
<td>All Others</td>
<td>16,745</td>
<td>12%</td>
</tr>
<tr>
<td>Total</td>
<td>138,331</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: FHWA – FAF4
Truck Traffic Volumes, 2015

- Highest truck volumes observed along I-65, I-20, I-459, I-59, and 280
- I-22 volumes likely to increase with connection complete
- I-65 handles the largest volumes of trucks throughout the region

Source: Birmingham MPO
Truck Share of Traffic, 2015

- Trucks make up more than 10 percent of the traffic flow on the core roadway network
- Highest concentrations of trucks occur outside the urban centers
- Non-Interstates emerge as key truck corridors including:
  - SR 269 from Birmingham to Port Birmingham
  - SR 79 and SR 75 to the North
  - SR 25 East and West of I-65
  - US 78 in Leeds

Source: Birmingham MPO
Waterway Movements

John Hollis

Source: USACE Navigation Data Center
Air Cargo

- Air Cargo is typically the least used mode for freight transportation.
- Goods transported by air are usually high value and/or time sensitive.
- Air cargo volumes have held steady at BHM:
  - Average of 23,704 tons/year since 2013
  - Largest percent growth has been in outbound mail
  - Jan – Mar 2017 volumes are 4% higher than the average for 2013 - 2016

Source: Birmingham-Shuttlesworth International Airport
Air Cargo

- Success of air cargo is tied to passenger services when dedicated air cargo carriers are not present
  - Much of air freight nationally is transported as belly cargo
- Limited air services at BHM impact flexibility of freight supply chains
  - 15 cities have direct air connections to Birmingham, many with only one direct flight per day
  - This also has an impact on businesses which have personnel flying into and out of the region

Source: Birmingham-Shuttlesworth International Airport
Economic Impacts of Freight

» Birmingham’s freight industry is a critical component to the regional economy

» 91K freight jobs (15%)

» $29 billion in economic output (28%)

» $65K average salary (45% higher than all others)

Source: IMPLAN, 2014.
Economic Impacts of Freight

Manufacturing has the largest impact on employment, employing nearly 37,000 persons or 40% of all freight-related employment.

Employment

- Manufacturing - 40%
- Wholesale Trade - 33%
- Transportation & Warehousing - 20%
- Agriculture, Forestry, Fishing, and Hunting - 3%
- Mining, Quarrying, and Oil & Gas Extraction - 4%

Source: IMPLAN, 2014.
Economic Impacts of Freight

Industries which generate finished products contribute more towards the region’s economic output.

Output

- Manufacturing - 58%
- Wholesale Trade - 24%
- Transportation & Warehousing - 11%
- Mining, Quarrying, and Oil & Gas Extraction - 6%
- Agriculture, Forestry, Fishing, and Hunting - 1%

Source: IMPLAN, 2014.
Economic Impacts of Freight

Freight-related employment generates nearly $6 billion in employee compensation

» Employees are paid roughly $20,000 more than non-freight related jobs

» Employees are paid roughly $40,000 more than an average job in retail trade or accommodation and food services

<table>
<thead>
<tr>
<th>Industry</th>
<th>Average Compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale Trade</td>
<td>$73,883</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>$66,961</td>
</tr>
<tr>
<td>Mining, Quarrying, and Oil &amp; Gas extraction</td>
<td>$58,330</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>$57,636</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>$7,431</td>
</tr>
<tr>
<td><strong>Freight Related</strong></td>
<td><strong>$65,056</strong></td>
</tr>
<tr>
<td>Non-Freight Related</td>
<td>$44,952</td>
</tr>
<tr>
<td>Statewide Average</td>
<td>$47,946</td>
</tr>
</tbody>
</table>

Source: IMPLAN, 2014.
Identification of Needs

- Review needs identified to date
  - Roadway needs largely available
  - Other modal needs limited

- Discuss best way to finalize needs lists by mode
  - Roadway needs
  - Roadway connectors to other modal hubs
  - Non-roadway network needs
Roadway Needs

- Current RTP lists many funded and unfunded projects that support freight movement
- Stakeholders identified many needs including capacity, maintenance, operational, regulatory, and development related
- Consolidated list will be developed for prioritization
- Some project types will be addressed through Plan recommendations
### Roadway Needs

#### 2040 Regional Transportation Plan
**Non-Exempt Projects (Capacity Projects)**
Birmingham Metropolitan Planning Area Based On US 2010 Census Data

#### Table 1: 2040 Regional Transportation Plan, Non-Exempt Projects (Capacity Projects) sorted by Analysis Year, then by sponsor, then by MAP ID

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ALDOT</td>
<td>657</td>
<td>I-65 Auxiliary Lane Hoover - From US 31 NB to Alford Avenue</td>
<td>6</td>
<td>8</td>
<td>1.50</td>
<td>2025</td>
<td>Yes</td>
<td>2030</td>
<td>1</td>
<td>500000309</td>
<td>CN</td>
<td>Additional Roadway Lanes</td>
<td>$2,679,817.745</td>
<td>$1,383,878,590</td>
<td>$80,087,225</td>
<td>$524,274,734</td>
<td>no change</td>
<td></td>
</tr>
<tr>
<td>ALDOT</td>
<td>658</td>
<td>I-65 Auxiliary Lane Hoover - From Alford Avenue NB to Lakeshore Parkway/Lakeshore Pkwy SB to Alford Avenue</td>
<td>6</td>
<td>8</td>
<td>1.00</td>
<td>2025</td>
<td>Yes</td>
<td>2030</td>
<td>1</td>
<td>500000310</td>
<td>CN</td>
<td>Additional Roadway Lanes</td>
<td>$14,801,655</td>
<td>$11,880,312</td>
<td>$5,729,810</td>
<td>$4,583,846</td>
<td>no change</td>
<td></td>
</tr>
<tr>
<td>ALDOT</td>
<td>659</td>
<td>I-65 Auxiliary Lane Hoover - From Lakeshore Parkway NB to Ousmoor Road/Oousmoor Road SB to Alford Avenue</td>
<td>6</td>
<td>8</td>
<td>1.00</td>
<td>2025</td>
<td>Yes</td>
<td>2030</td>
<td>1</td>
<td>500000312</td>
<td>CN</td>
<td>Additional Roadway Lanes</td>
<td>$7,588,508</td>
<td>$6,071,507</td>
<td>$2,661,076</td>
<td>$2,128,061</td>
<td>adding lanes</td>
<td></td>
</tr>
<tr>
<td>ALDOT</td>
<td>660</td>
<td>I-65 Auxiliary Lane Hoover - From Ousmoor Road NB to Greenupings Avenue/Greenupings Road SB to Ousmoor Road. Bridge replacement at Valley Ave</td>
<td>6</td>
<td>8</td>
<td>1.00</td>
<td>2027</td>
<td>Yes</td>
<td>2030</td>
<td>1</td>
<td>500000313</td>
<td>CN</td>
<td>Additional Roadway Lanes/Bridge</td>
<td>$8,740,354</td>
<td>$5,392,283</td>
<td>$2,147,694</td>
<td>$1,718,148</td>
<td>adding lanes and widening a bridge</td>
<td></td>
</tr>
</tbody>
</table>

Source: MPO Staff, June 11, 2015
Rail Needs

- Resolve conflicts with roadways (crossings, etc.)
- Preserve rail-served industrial property for rail-served industrial use
- Promote use of rail at rail served properties
Port/Waterway Needs

- Waterways, locks, berths are mostly in good condition

- Needs include:
  - Continue to maintain locks, dams, and dredging
  - Improve utilities, especially internet, and access to waterside properties
  - Promote Port of Birmingham through marketing of services
  - Develop climate controlled warehouse space to attract new markets
  - Designate Port Birmingham as FTZ
  - Create stronger rail links to commodity-appropriate industries and markets (e.g., to agricultural markets in the Midwest)
Airport Needs

- Main runway and taxiway are too close
- Second runway is inadequate
- East cargo area would require new roadway access
- Additional passenger flights would facilitate growth in air cargo
- Master Plan defines short, medium and long term needs

Finalizing Needs List

- **Roadways**
  - Review RTP needs and add in any identified projects from field review and stakeholder input

- **Railroads**
  - Requests will be sent to each railroad contact asking for specific projects

- **Ports/Waterways**
  - Requests will be sent to Port Birmingham and the waterway associations asking for specific projects

- **Airport**
  - Review master plan and discuss project list with airport staff
Prioritization of Needs

- Review performance-based approach
- Define agreed upon approach for this Plan
- Discuss possible performance metrics
- Discuss available data
- Identify direction for next steps
Performance-Based Planning

- **Goal**: Long-term, desired outcome
- **Objective**: Specific strategy to achieve goal
- **Performance Measure**: Evaluation criteria to measure progress towards goal
- **Target**: Specific point at which goal is achieved
- **Resource Allocation**: Funded projects
- **Monitor/Report**: Tracking outcomes
Performance-Based Planning

- Supports transparent decision-making in competitive funding environment
- Provides context for plan development and helps balance analysis across competing needs
- Ensures investment decisions align with long-term goals
- Allows agency to manage expectations
Guiding Principles for Regional Freight Plan

- Define a strategic set of freight investment goals/objectives to guide investment
- Focus on “vital few” performance measures that align with freight investment goals and are easily understood
  - Combination of qualitative and quantitative performance metrics is preferred
- Support federal and state performance focus areas
  - Nest within upcoming RTP update process
- Yield High/Medium/Low project ranking to inform future 2045 Regional Transportation Plan update
Focus Areas for Performance Evaluation

Federal
- National/international trade
- Competitiveness

States/MPOs/RPCs
- Access and mobility
- Safety, security
- Efficiency
- Community
- Environment

Shippers / Carriers
- Service cost
- Profitability
- Return on investment
## Draft Performance Framework

<table>
<thead>
<tr>
<th>Performance Area</th>
<th>Goals</th>
<th>Objectives</th>
<th>Performance Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Impacts</td>
<td>Advance regional economic development through strategic freight investments</td>
<td>Improve access to critical freight assets</td>
<td>Project improves last-mile access to designated freight facility/asset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improve (intermodal) connections on freight network</td>
<td>Project improves network connection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Project provides capacity for designated freight network</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhance freight related employment and development opportunities</td>
<td>Number of jobs created/served (short-term, long-term)</td>
</tr>
<tr>
<td>External Impacts</td>
<td>Identify opportunity to leverage freight investment for benefit of all</td>
<td>Mitigate negative impacts of freight development</td>
<td>Project scope minimizes impact to surrounding community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improve safety for all freight system users</td>
<td>Crash reduction (or Existing number/rate of crashes)</td>
</tr>
<tr>
<td>Transportation Impacts</td>
<td>Improve freight mobility</td>
<td>Reduce delay on freight network</td>
<td>(Truck) Vehicle-hours delay reduced</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reduce costs for shippers, operators, and consumers</td>
<td>Travel cost savings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhance travel time reliability</td>
<td>Project improves network reliability</td>
</tr>
</tbody>
</table>
Other Selection Criteria For Discussion and Consideration

- Improves export/import capability and capacity of intermodal asset
- Responds to identified market need
- Eliminates freight bottleneck
- Provide dedicated freight facility (additional capacity detail)
- Uses technology to improve freight operations
- Improves safety/security at rest stops, layover areas or other freight facilities
- Stimulates use of marine highways or short sea shipping
- Project reduces empty backhaul movements (to cut shipping costs)
- In local freight plan
- Private/public fund split
- Provide cross-modal benefits
- Project readiness
- Dependency on other projects
- Improves asset condition
Option 1: Evaluate by Mode

- Assign and evaluate projects by mode (air, rail, water, road)
- Projects evaluated and scored against same set of evaluation criteria, but criteria weighted differently to reflect unique needs of each mode; e.g.,
  - Air: capacity weighted higher
  - Rail: Intermodal connections weighted higher
- Rank projects based on performance impacts (within mode or across all modes)
Option 2: Integrate Cost Considerations

- Combine effectiveness (how well a project is performing) with cost-effectiveness (how expensive the performance impacts will be)

![Graph showing performance score vs. cost-effectiveness](image-url)
Project Prioritization Process Discussion

- Level of technical detail
- Weighting performance criteria
- Modal distinction
- Cost considerations
- Other stakeholder considerations
Remaining FTAC Activities

- Review draft needs and priorities
- Review draft plan
- Attend one more FTAC meeting

Question: Would you be willing and/or interested to add a fourth meeting?
  » FTAC Meeting #3 to review prioritized needs
  » FTAC Meeting #4 to review final plan
Next Steps

- Complete profile
- Develop list of project needs
- Finalize prioritization methodology
- Calculate priorities
- Develop outline for final plan
Additional Slide Material

The below slides provide additional details in support of the above presentation
What Did We Learn from Last FTAC Discussion?

- Morning delivery and afternoon pickup are difficult due to congestion
- Manufacturing and distribution volumes vary with the economy
- Plan should focus on multimodal list of needs/projects
- Opportunities should address economic development
- Region needs to find opportunities to replace shrinking industries
- Urban delivery is difficult with insufficient loading/unloading facilities
- Key Interstate interchanges have dangerous weaving areas
What Did We Learn from Last FTAC Discussion?

- Rail corridors should be preserved for industrial use and operations.
- Rail served sites do not always take advantage of rail service; and there is an overall lack of rail served sites available.
- Key at grade rail crossings should be identified.
- Consider grade separation projects to address rail operations and community quality of life and safety.
- Region is home to network of industrial parks, FTZs, private warehouse and distribution centers.
- Growth in demand for air cargo service is needed to stimulate airport growth.
- Effective development and use of incentive programs to attract and retain businesses is needed.
Designation Critical Urban Freight Corridors

What are the requirements for designating a CUFC?

- For an urbanized area with a population of 500,000 or more, the MPO, in consultation with the State, may designate a CUFC.

- A public road designated as a CUFC must be in an urbanized area, and meet one or more of the following four elements:
  - (A) connects an intermodal facility to:
    - the PHFS;
    - the Interstate System; or
    - an intermodal freight facility;
  - (B) is located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement;
  - (C) serves a major freight generator, logistic center, or manufacturing and warehouse industrial land; or
  - (D) is important to the movement of freight within the region, as determined by the MPO or the State.

https://ops.fhwa.dot.gov/fastact/crfc/sec_1116_gdnce.htm
Designation Critical Urban Freight Corridors

- FHWA encourages States to consider first or last mile connector routes from high-volume freight corridors to freight-intensive land and key urban freight facilities, including ports, rail terminals, and other industrial-zoned land.

- For each State, a maximum of 75 miles of highway or 10 percent of the PHFS mileage in the State, whichever is greater, may be designated as CUFCs.

- States and MPOs (for urbanized areas over 500,000) are responsible for jointly determining how to distribute the CUFC mileage among the urbanized areas.

- CUFC Maximum Mileage Limit for Alabama is 81.30

https://ops.fhwa.dot.gov/fastact/crfc/sec_1116_gdnce.htm
Alabama Warrior Railway

- 24 miles of rail with a track capacity of 268,000 lbs
- Currently owned by Watco
- Predominately used to ship coal

Source: Watco.
Connects Birmingham to the Port of Guntersville via rail

Owned by OmniTRAX and operates 120 miles of track

Source: OmniTRAX.
Birmingham Terminal Railway

- 96 miles of rail serving more than 30 customers, including access to the Port Birmingham Terminal
- Current track has a capacity of 286,000 lbs
- Owned by Watco

Source: Watco.
BNSF Railway

- Birmingham is part of BNSF’s Heartland Division
- As one of the largest railroads in the country, BNSF connects Birmingham with most of the western United States

Source: BNSF.
CSX Transportation

- CSX’s extensive network connects Birmingham with much of the east coast
- Facilities in Birmingham (Boyles) include a major rail yard, TDSI auto distribution terminal, and a TRANSFLO Terminal Service Bulk Transfer Terminal

Source: CSX.
Norfolk Southern also provides service to the eastern portion of the United States.

Terminal in Birmingham handles TOFC/COFC, STACK Cars, and Express NS.

Source: Norfolk Southern.
Commodity Flow Analysis

Movements by Mode

- Majority of goods move by truck, followed by rail and pipeline
  - With last mile deliveries, trucks effectively handle near all shipments
  - Note water is not captured by FAF due to the waterway system’s position relative to FAF zones

Share of All Tonnage Moved, 2015

- Truck - 68%
- Rail - 20%
- Pipeline - 9%
- Other/Unknown - <1%
- Air (includes truck-air) - <1%
- Multiple Modes & Mail - 3%

Source: FHWA – FAF4
## Commodity Flow Analysis

**Value Moved by Mode and Modal Share, 2015**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Origin ($M)</th>
<th>Destination ($M)</th>
<th>Internal ($M)</th>
<th>Total ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>$38,445</td>
<td>$45,424</td>
<td>$35,838</td>
<td>$119,707</td>
</tr>
<tr>
<td>Rail</td>
<td>$3,994</td>
<td>$4,321</td>
<td>$182</td>
<td>$8,498</td>
</tr>
<tr>
<td>Pipeline</td>
<td>$199</td>
<td>$2,992</td>
<td>$0</td>
<td>$3,191</td>
</tr>
<tr>
<td>Multiple Modes &amp; Mail</td>
<td>$4,958</td>
<td>$8,100</td>
<td>$898</td>
<td>$13,956</td>
</tr>
<tr>
<td>Air (Includes Truck-Air)</td>
<td>$473</td>
<td>$435</td>
<td>$0</td>
<td>$908</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>$3</td>
<td>$14</td>
<td>$0</td>
<td>$17</td>
</tr>
<tr>
<td>Water</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$48,072</strong></td>
<td><strong>$61,287</strong></td>
<td><strong>$36,918</strong></td>
<td><strong>$146,277</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>Origin</th>
<th>Destination</th>
<th>Internal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>80%</td>
<td>74%</td>
<td>97%</td>
<td>82%</td>
</tr>
<tr>
<td>Rail</td>
<td>8%</td>
<td>7%</td>
<td>0%</td>
<td>6%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>0%</td>
<td>5%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Multiple Modes &amp; Mail</td>
<td>10%</td>
<td>13%</td>
<td>2%</td>
<td>10%</td>
</tr>
<tr>
<td>Air (Includes Truck-Air)</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Water</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: FHWA – FAF4
## Commodity Flow Analysis

**Top Trading Partners by Tonnage, 2015**

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Origin (1,000 tons)</th>
<th>Destination (1,000 tons)</th>
<th>Internal (1,000 tons)</th>
<th>Total (1,000 tons)</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>20,409</td>
<td>15,795</td>
<td>35,352</td>
<td>71,555</td>
<td>52%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>2,765</td>
<td>11,540</td>
<td>0</td>
<td>14,305</td>
<td>10%</td>
</tr>
<tr>
<td>Wyoming</td>
<td>2</td>
<td>9,111</td>
<td>0</td>
<td>9,113</td>
<td>7%</td>
</tr>
<tr>
<td>Georgia</td>
<td>2,906</td>
<td>3,198</td>
<td>0</td>
<td>6,104</td>
<td>4%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>2,986</td>
<td>1,672</td>
<td>0</td>
<td>4,658</td>
<td>3%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>166</td>
<td>3,067</td>
<td>0</td>
<td>3,233</td>
<td>2%</td>
</tr>
<tr>
<td>Florida</td>
<td>2,088</td>
<td>1,102</td>
<td>0</td>
<td>3,189</td>
<td>2%</td>
</tr>
<tr>
<td>Indiana</td>
<td>1,296</td>
<td>1,111</td>
<td>0</td>
<td>2,408</td>
<td>2%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>69</td>
<td>2,337</td>
<td>0</td>
<td>2,406</td>
<td>2%</td>
</tr>
<tr>
<td>Illinois</td>
<td>1,020</td>
<td>1,302</td>
<td>0</td>
<td>2,322</td>
<td>2%</td>
</tr>
<tr>
<td>Ohio</td>
<td>1,125</td>
<td>1,166</td>
<td>0</td>
<td>2,291</td>
<td>2%</td>
</tr>
<tr>
<td>All Others</td>
<td>9,118</td>
<td>7,627</td>
<td>0</td>
<td>16,745</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43,951</strong></td>
<td><strong>59,028</strong></td>
<td><strong>35,352</strong></td>
<td><strong>138,331</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: FHWA – FAF4
Commodity Flow Analysis

Trading Partners - Outbound

 Commodities originating in the region typically do not travel far and very little is sent west

» Largest receivers of this freight are Alabama, Tennessee, Georgia, Mississippi, and Florida

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Origin (1,000 tons)</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>20,409</td>
<td>46%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>2,986</td>
<td>7%</td>
</tr>
<tr>
<td>Georgia</td>
<td>2,906</td>
<td>7%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>2,765</td>
<td>6%</td>
</tr>
<tr>
<td>Florida</td>
<td>2,088</td>
<td>5%</td>
</tr>
<tr>
<td>Indiana</td>
<td>1,296</td>
<td>3%</td>
</tr>
<tr>
<td>Ohio</td>
<td>1,125</td>
<td>3%</td>
</tr>
<tr>
<td>Illinois</td>
<td>1,020</td>
<td>2%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>166</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>69</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Wyoming</td>
<td>2</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>All Others</td>
<td>9,118</td>
<td>21%</td>
</tr>
<tr>
<td>Total</td>
<td>43,951</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: FHWA – FAF4
Commodity Flow Analysis
Trading Partners - Inbound

More goods come into the region than leave it

- These goods come from similar states as the outbound movements are sent to with some exceptions (Wyoming (coal) and Minnesota (metallic ores))

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Destination</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>15,795</td>
<td>27%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>11,540</td>
<td>20%</td>
</tr>
<tr>
<td>Wyoming</td>
<td>9,111</td>
<td>15%</td>
</tr>
<tr>
<td>Georgia</td>
<td>3,198</td>
<td>5%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>3,067</td>
<td>5%</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>2,337</td>
<td>4%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>1,672</td>
<td>3%</td>
</tr>
<tr>
<td>Illinois</td>
<td>1,302</td>
<td>2%</td>
</tr>
<tr>
<td>Ohio</td>
<td>1,166</td>
<td>2%</td>
</tr>
<tr>
<td>Indiana</td>
<td>1,111</td>
<td>2%</td>
</tr>
<tr>
<td>Florida</td>
<td>1,102</td>
<td>2%</td>
</tr>
<tr>
<td>All Others</td>
<td>7,627</td>
<td>13%</td>
</tr>
<tr>
<td>Total</td>
<td>59,028</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: FHWA – FAF4
Commodity Flow Analysis

Top Commodities

- The largest commodity in the region by tonnage is coal
  - Stakeholder input suggests this commodity is decreasing
  - Anticipated to decrease at least another 9% by 2040
  - Largest percentage growth of these anticipated to be from waste/scrap with a 72% growth by 2040
  - Largest growth in tonnage expected from nonmetal mineral products with an additional 5,640 tons by 2040 (+55%)

Source: FHWA – FAF4
Waterway Movements, 2016

Source: USACE Navigation Data Center